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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/056,823	KAUSHIK ET AL.	
	Examiner	Art Unit	
	Kevin Mew	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,12,16,17,22-27,36,41-46,53,57 and 58* is/are rejected.

7)☒ Claim(s) *7-11,13-15,18-21,28-35,37-40,47-52,54-56 and 59-61* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 5/8/2007 have been fully considered. Claims 1-61 are currently pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 12, 22-23, 41-42, 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Taylor et al. (USP 6,823,349).

Regarding claim 1, Taylor discloses a fault tolerant method to update a Fiber Channel database (update a fiber channel database storage array, element 39, Fig. 1), comprising:

receiving a first message (receiving a write request operation) from a commit master (from a primary image site, see abstract, col. 2, lines 62-67, col. 3, lines 1-9);

detecting the loss of the commit master (detecting failure of the primary storage unit, col. 6, lines 17-41); and

resending the first message to each of a specified one or more devices (resynchronizing the write image operation to the secondary storage unit once the primary storage unit is operational, col. 6, lines 17-41) if the first message or a prior message from the commit master

includes update data (if the write request operation from the primary storage unit includes update portions of the secondary images identified in the write intent log, col. 6, lines 17-41), else aborting the update operation (only those portions of the secondary images identified in the write intent log needs to be written/updated in the write operation, col. 6, lines 17-41).

Regarding claim 22, Taylor discloses a Fiber Channel switch (fiber channel storage system, col. 6, lines 42-67, element 23, Fig. 1), comprising:

a port for receiving and sending message signals (a network interface port of a secondary storage processor 37, element 37, Fig. 1);

a database storage for storing at least a portion of a database (a storage unit for storing images of a secondary storage processor SP 37, element 41, Fig. 1);

a control unit for executing program instructions (automatic backup/restoral logic of SP 37, element 109, Fig. 3); and

storage (write cache of SP 37, element 215, Fig. 3), readable by the control means (readable by the automatic backup/restoral logic of SP 37), having instructions for causing the control unit to receive a first message (causing the automatic backup/restoral logic to store the write intent log, col. 8, lines 26-55 and Fig. 3) from a commit master (from a primary image site 23, see abstract, col. 2, lines 62-67, col. 3, lines 1-9);

detect the loss of the commit master (detecting failure of the primary storage unit, col. 6, lines 17-41); and

resend the first message to each of a specified one or more devices (resynchronizing the write image operation to the secondary storage unit once the primary storage unit is operational,

col. 6, lines 17-41) if the first message or a prior message from the commit master includes update data (if the write request operation from the primary storage unit includes update portions of the secondary images identified in the write intent log, col. 6, lines 17-41), else aborting the update operation (only those portions of the secondary images identified in the write intent log needs to be written/updated in the write operation, col. 6, lines 17-41).

Regarding claim 41, Taylor discloses a digital network (Fibre channel network, Fig. 1), comprising:

a first switch (a combination of switch 17 and storage system 23, Fig. 1) adapted to initiate a database update operation (initiates an update operation, col. 2, lines 62-67, col. 3, lines 1-9);

a second switch (a combination of switch 47 and storage system 35, Fig. 1) communicatively coupled to the first switch (communicatively coupled to first switch, Fig. 1), the second switch having database storage (storage system 35 having a storage unit 41, Fig. 1), a control circuit adapted to execute instructions (automatic backup/restoral logic of SP 37, element 109, Fig. 3), and a storage (write cache, element 215, Fig. 3) readable by the control circuit (readable by the automatic backup/restoral logic of SP 37) and having instructions encoded therein to cause the control circuit (causing the automatic backup/restoral logic, col. 8, lines 26-55 and Fig. 3)

to receive a first message (receiving a write request operation) from a commit master (from a primary image site, see abstract, col. 2, lines 62-67, col. 3, lines 1-9);

detect the loss of the commit master (detecting failure of the primary storage unit, col. 6, lines 17-41); and

resend the first message to each of a specified one or more devices (resynchronizing the write image operation to the secondary storage unit once the primary storage unit is operational, col. 6, lines 17-41) if the first message or a prior message from the commit master includes update data (if the write request operation from the primary storage unit includes update portions of the secondary images identified in the write intent log, col. 6, lines 17-41), else aborting the update operation (only those portions of the secondary images identified in the write intent log needs to be written/updated in the write operation, col. 6, lines 17-41).

a control unit for executing program instructions (automatic backup/restoral logic of SP 37, element 217, Fig. 3); and

storage (write cache of SP 37, element 215, Fig. 3), readable by the control means (readable by the automatic backup/restoral logic of SP 37), having instructions for causing the control unit to receive a first message (causing the automatic backup/restoral logic to store the write intent log, col. 8, lines 26-55 and Fig. 3) from a commit master (from a primary image site 23, see abstract, col. 2, lines 62-67, col. 3, lines 1-9).

Regarding claims 2, 23, 42, Taylor discloses the method of claims 1, 22, 41, further comprising updating an identified one or more entries in the Fiber Channel database with the update data (col. 6, lines 17-41).

Regarding claims 12, 53, Taylor discloses the method of claim 1, wherein the act of receiving a first message further comprises verifying the update data received as part of the first message (col. 6, lines 17-41).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3-6, 24-27, 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al. (USP 6,823,349) in view of Banks et al. (US Publication 2005/0018619).

Regarding claims 3-6, 24-27, 43-46, Taylor discloses all the aspects of the claimed invention set forth in the rejection of claims 2, 22, and 41 above, except fails to explicitly show the method of claim 2, wherein the Fiber Channel database comprises a zoning database, a name service database, a security database and a management database.

However, Banks discloses a Fiber Channel system that implements a zoning database wherein the zoning database provides name service, security and management (paragraphs 0016, 0037, 0054).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the distributed storage system of Taylor with the teaching of Banks in implementing a zoning database that provides a name service, management and security functions.

The motivation to do so is to allow the creation of segmentation or zones within a fabric so that devices coupled to the fabric can be subdivided into logical groups pf devices without the need to physically reconfigure the network, and to dynamically and quickly adapt the configuration of devices to varying network needs.

4. Claims 16-17, 36, 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor in view of Ofek et al. (USP 5,901,327).

Regarding claims 16-17, 36, 57-58, Taylor discloses all the aspects of the claimed invention set forth in the rejection of claims 2, 22, 41 above, except fails to explicitly show the method of claim 1, wherein the act of detecting the loss of the commit master comprises failing to receive a second message from the commit master within a specified time period.

However, Ofek discloses a remote data mirroring system that indicates a failure occurs if no response is received at a primary data storage system after a predetermined amount of time (col. 12, lines 42-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the distributed storage system of Taylor with the teaching of Ofek in indicating an update failure condition if no acknowledgement is received after a specified amount of time such that the distributed storage system of Taylor will comprise a detection means to detect the loss of the commit master comprises failing to receive a second message from the commit master within a specified time period.

The motivation to do so is to set a timeout period condition to indicate whether a data update failure occurs or not.

Response to Arguments

5. Applicant's arguments filed on 5/8/2007 with respect to claims 1, 22, 28, 41, 47 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

6. Claims 7-11, 13-15, 18-21, 28-35, 37-40, 47-52, 54-56, 59-61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 7, 28, 47, the method of claims 1, 22, 41, wherein the act of aborting comprises:

identifying which of the specified one or more devices can receive an abort message; and

sending the abort message to the identified one or more devices.

Regarding claims 8, 29, 48, wherein the act of sending the abort message comprises sending a Release Change Authorization message.

Regarding claims 9, 30, 49, wherein the act of receiving a first message comprises:

receiving an Acquire Change Authorization message; and

sending an accept message to the commit master.

Regarding claims 10, 31, 50, wherein the act of receiving a first message comprises:

receiving a Stage Fabric Configuration message; and

sending an accept message to the commit master.

Regarding claims 18, 37, the method of claims 1, 22, wherein the act of resending the first message comprises:

identifying which of the specified one or more devices can receive the resent message; and resending the first message to those identified one or more devices.

Regarding claim 51, wherein the instructions to receive a Stage Fabric Configuration message further comprise instructions to verify the update data.

Regarding claims 11, 32, 52, wherein the act of receiving a first message comprises:

receiving an Update Fabric Configuration message; and

sending an accept message to the commit master.

Regarding claims 13, 33, 54, wherein the act of receiving a first message comprises:

receiving a first update message from a first switch and a second update message from a second switch;

accepting one of the first or second update messages; and

rejecting the other of the first or second update messages.

Regarding claims 19, 38, 59, further comprising:

receiving a second message from one of the identified one or more devices; and

aborting the update operation specified in the resent message.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KM

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CHI PHAM
SUPERVISORY PATENT EXAMINER
7/23/07